



## DESCRIPTION

KS4 is a set of SPST-NO AC output PCB mount Mini-SIP type SSR. The SSR has three DC input options 5VDC, 12VDC and 24VDC for selection and provides photoelectric isolation between input and output and offers two alternative switching modes: zero-cross turn-on and random turn-on, suitable for the control of electromagnetic valves, motors, electric incandescent lamps, etc.

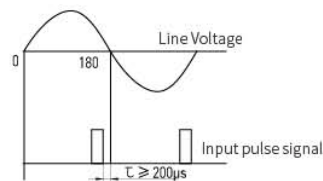
## FEATURES

- ◆ TTL compatible
- ◆ Load current 0.1~2A
- ◆ Dielectric strength 2500V
- ◆ PCB mount

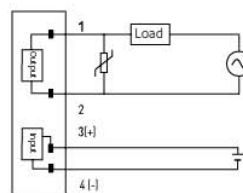
## PRECAUTIONS

1. Soldering must be completed within 10s at 260°C or 5s at 350°C.
2. The SSR's case serves to dissipate the heat generated by the SSR itself. If poor ventilation is unavoidable, the load current must be derated. Please refer to the curve of Max. Load Current vs. Ambient Temperature for derating.
3. The internal input circuit of SSR does not have the reverse polarity protection, thus make sure the wiring of input and output and the input polarity are correct so as to avoid any damage to the SSR.
4. If the output transient voltage exceeds the nominal value, a varistor should be connected to the SSR's output terminal in parallel to prevent the SSR being broken down. The recommended varistor voltage is 470V.
5. When the SSR is used for phase modulation, the time interval between the negative edge of the input pulse signal and the line voltage zero crossing point must last over 200μs, or it may be out of control.

6. Please do not use the SSR exceeding the limitation which is specified on this datasheet.



7. Please refer to below wiring diagram.



## SELECTION GUIDE

| KS4 / | 12-  | 24                         | Z  | 2-                    | M  | (XXX)                 |
|-------|--|----------------------------|--|-----------------------|--|-----------------------|
| Type  | Control voltage<br>5: 5VDC<br>12: 12VDC<br>24: 24VDC | Load voltage<br>24: 240VAC | Switching mode<br>Z: Zero-cross<br>P: Random | Load current<br>2: 2A | Termination<br>T: T type<br>M: M type<br>K: K type | Customer special code |

## INPUT SPECIFICATIONS (Ta = 25°C)

|                       |    |                |
|-----------------------|----|----------------|
| Control voltage range | 5  | 4 ~ 6VDC       |
|                       | 12 | 9.6 ~ 14.4VDC  |
|                       | 24 | 19.2 ~ 28.8VDC |
| Must turn-on voltage  | 5  | 4VDC           |
|                       | 12 | 9.6VDC         |
|                       | 24 | 19.2VDC        |
| Must turn-off voltage |    | 1VDC           |
| Max. input current    |    | 25mA           |
| Input resistance      | 5  | 270Ω           |
|                       | 12 | 750Ω           |
|                       | 24 | 1.64kΩ         |

## OUTPUT SPECIFICATIONS (Ta = 25°C)

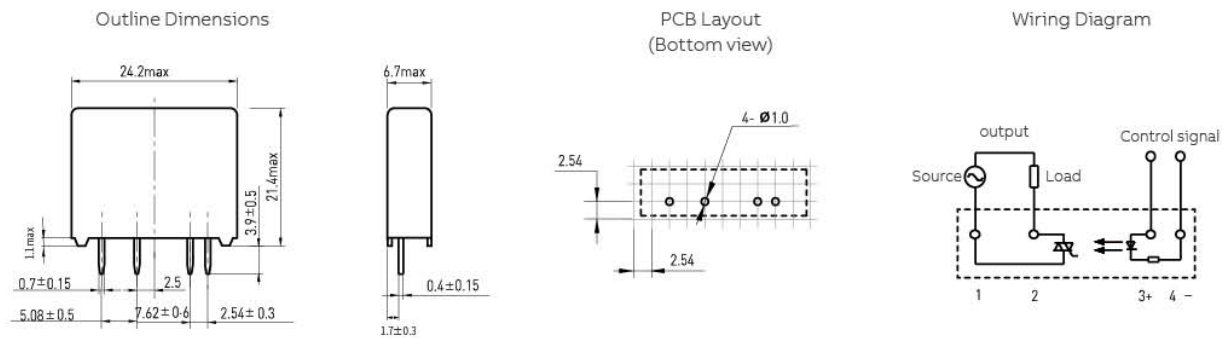
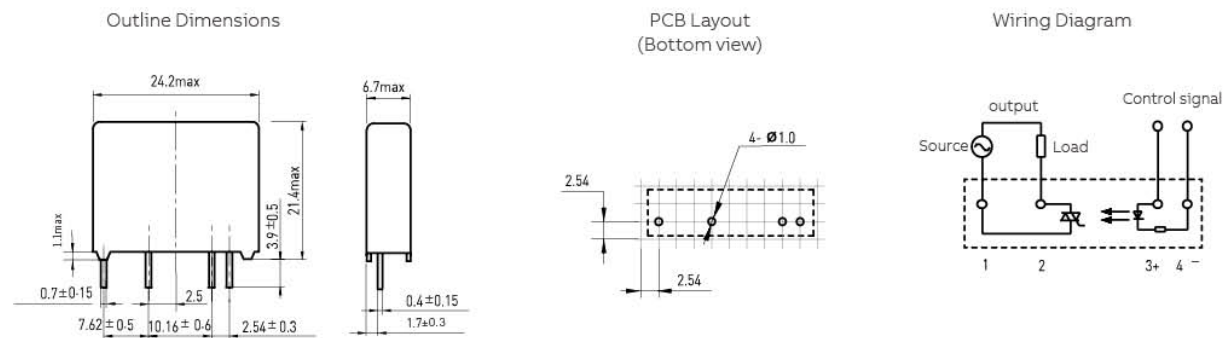
|   |            |                        |
|---|------------|------------------------|
| Load voltage range                      |            | 48 ~ 280VAC            |
| Load current range                      |            | 0.1 ~ 2A               |
| Max. surge current (10ms)               |            | 25A <sub>pk</sub>      |
| Max. I <sup>2</sup> t for fusing (10ms) |            | 3.1A <sup>2</sup> s    |
| Max. off-state leakage current          |            | 1.5mA                  |
| Max. on-state voltage drop              |            | 1.5V <sub>r.m.s.</sub> |
| Max. turn-on time                       | Zero-cross | 1/2 Cycle + 1ms        |
|   | Random     | 1ms                    |
| Max. turn-off time                      |            | 1/2 Cycle + 1ms        |
| Max. transient voltage                  |            | 600V <sub>pk</sub>     |
| Min. off-state (dv/dt)                  |            | 100V/μs                |
| Max. zero-cross over voltage            |            | ±15V                   |
| Min. power factor                       |            | 0.5                    |

**GENERAL SPECIFICATIONS (Ta = 25°C)**

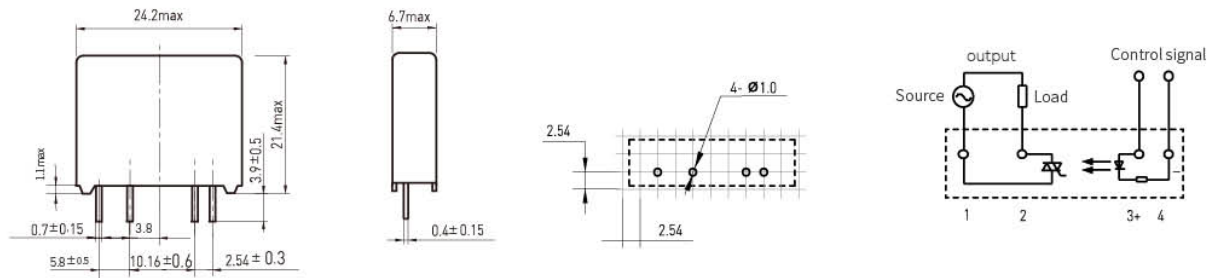
|                                    |                          |
|------------------------------------|--------------------------|
| Dielectric strength (input/output) | 2500VAC, 50Hz/60Hz, 1min |
| Insulation resistance              | 1000MΩ (500VDC)          |
| Max. capacitance (input/output)    | 5pF                      |
| Vibration resistance               | 10~ 55Hz, 1.5mm, DA      |
| Shock resistance                   | 980m/s <sup>2</sup>      |
| Operating temperature              | -30 ~ 80°C               |
| Storage temperature                | -30 ~ 100°C              |
| Ambient humidity                   | 45% ~ 85% RH             |
| Unit weight                        | Approx. 6g               |

**OUTLINE DIMENSIONS, WIRING DIAGRAM AND PCB LAYOUT**

Unit: mm

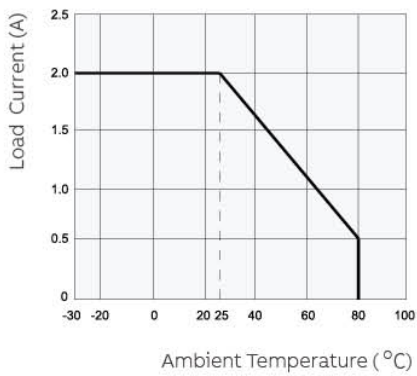
**T type****M type**

K type



CHARACTERISTIC CURVES

Max. Load Current vs. Ambient Temperature



Max. Permissible Non-repetitive Peak Surge Current vs. Continuance Time

